TO STUDY THE EFFICACY OF HYSTEROSCOPY AS A SCREENING METHOD IN PATIENTS WITH ABNORMAL UTERINE BLEEDING

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BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled "**TO STUDY THE EFFICACY OF HYSTEROSCOPY AS A SCREENING METHOD IN PATIENTS WITH ABNORMAL UTERINE BLEEDING"** is a bonafide record work done by **Dr. N. KURINJI PRIYA** under my direct supervision and guidance, submitted to the Tamil Nadu Dr. M.G.R. Medical University in partial fulfillment of University regulation for M.D Branch II – Obstetrics & Gynaecology.

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DECLARATION

I **Dr. N. KURINJI PRIYA** solemnly declare that the dissertation titled **"TO STUDY THE EFFICACY OF HYSTEROSCOPY AS A SCREENING METHOD IN PATIENTS WITH ABNORMAL UTERINE BLEEDING"** has been prepared by me. I also declare that this bonafide work or a part of this work was not submitted by me or any other for any award, degree, diploma to any other University board either in India or abroad.

This is submitted to The Tamilnadu Dr. M. G. R. Medical University, Chennai in partial fulfillment of the rules and regulation for the award of M.D degree Branch – II (Obstetrics & Gynecology) to be held in March 2010.

Place : Madurai **Dr. N. KURINJI PRIYA**

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CONTENTS

INTRODUCTION

Abnormal uterine bleeding (AUB) is a common complaint in "gynaecological practice. It represents a major proportion of outpatient attendance. The most probable cause of abnormal uterine bleeding depends on the patient's reproductive age and the likelihood of serious endometrial pathology like malignancy increases with age. The diagnosis of AUB is by exclusion.

Before hysteroscopy was available, curettage was the primary method of evaluating abnormal uterine bleeding. Brooks and Serden have revealed that approximately half of pedunculated abnormalities such as endometrial polyps were missed by curettage. It renders endometrial sampling blind and incomplete, so the diagnostic accuracy of curettage is less than that of hysteroscopy.

For Focal lesions, D & C is less accurate and less reliable However, it gives histopathological report, which is of immense value in the treatment of AUB. According to Valle, hysteroscopy

is not a substitute for tissue diagnosis. According to Loffer, a tissue diagnosis is essential. Though, transvaginal sonography is considered as an initial investigation in patients with AUB, the prediction of endometrial pathology based on ultrasound scan in premenopausal women is not reliable because of great overlap between normal range and those with endometrial pathology. So, hysteroscopy combined with histological examination is the new "Gold Standard" for evaluating a case with AUB (Widrich et al , Bakour)

AIM OF THE STUDY

The objective of the present study is to evaluate the usefulness of Hysteroscopy as a screening method in patients with AUB in relation to the histopathology results of the endometrial biopsy and results of transvaginal sonography.

1. To evaluate the usefulness of hysteroscopy as a screening method in patients with Abnormal uterine bleeding.
2. To compare the efficacy of hysteroscopy in diagnosing of endometrial pathology with transvaginal sonography and its correlation with histopathology.

REVIEW OF LITERATURE

HISTORY OF THE TYPES OF THE ENDOMETRIUM IN DUB

* As far as 1860, Scansoni stated that the common female disease was chronic metritis and that the bleeding was due to abnormal brittleness of the arteries.

* Remiche (1897), Slocum (1908) and Findley (1905) attached importance to the uterine arteriosclerosis as a cause of bleeding.

* The term “Apoplexy uterus” is said to have been used by Guveilbein as early as 1882.

* Brenecke described the so called ‘endometritis oophoritis’ which is know as hyperplasia of the endometrium. Then the hormonal function of the ovary was not even known.

* Pankor (1909) emphasized the term ‘Metropathia haemorrhagica’ as there was increased elastic tissue in the blood vessel.

* 1910 Thailbater denoted the defective contractility of mesometrium to embrace connective tissue as well as the musculature of the uterus.

* Later on in 1915, Schroeder evolved a working concept of the mechanism involved in Metropathia haemorrhogica, and William P also contributed to this study in hysterectomised specimens of AUB.

Endometrial Hyperplasia.

* French surgeons Robert (1846), Robin (1848) and Nelton (1853), made the first clinical observation of hyperplasia.

* Recamier (1850) the inventor of curette, advised curettage as a method of treatment and met with strong opposition by Aron (1958) and Becaucert (1859)

* Olshavsen (1875) described the histology and its association with uterine bleeding. He called it “endometritis fungosis” and “chronic hyperplasia”.

* Cullen (1900) described in English and coined the term “hyperplastic endometrium.”

* Robert Schroeder (1915 & 1919) by his epoch making work ruled out the older inflammatory theory and correlated endometrial hyperplasia with persis.

* Robert Meyer (1920) described the ovarian changes and drew attention to graffian follicle maturation and their disintegration by atresia.

* Anatomic studies of E Novak, Seitre, Baher, Reuge, Novak, Adler, Martzold, Backmarard, Wilfred shaw were published in 1920.

* Hanghaver (1930) attempted to reproduce hyperplasia by injecting anterior pituitary extracts to guinea pigs.

* Fluhman (1931) suggested that hyperplasia is due to unopposed action of estrogen.

* Zucherman and Movie Jeffcoate, Dayne, Taylor Novak (1936) said that hyperplasia is due to excessive estrogen.

* Clessens and Cowell found 19% of adolescent girls with menorrhagia having a haemostatic defect while Smith et al found the incidence to be 33%.

* Falcone et al found only 3.3% of patients admitted for menorrhagia over a 10 year period.

* Studies by Ash et al, suggested that menstrual cycle irregularity and hypertension were independently significant risk factors for detecting abnormal endometrial riskfactors.

* Lettererrand Masshoff, 1941 described the glandular epithelium of endometrium of cystoglandular hyperplasia.

* Gruner 1942 described about the luteinisation of follicular epithelium that may be reflected in the endometrium as patchy secretory changes.

* Schmidt 1965, Matihesan 1967 studied about estrogen and its stimulation of fibrinolytic activity of endometrium

* Kurman et al 1985 have studied the progression of endometrial hyperplasia to carcinoma

* Sharman and Brown 1979 showed that Grade I and Grade II endometrial hyperplasia have 22% and grade III has 57% chance of development of carcinoma endometrium.

ATYPICAL HYPERPLASIA

Cullen as early as 1900 described atypical endometrium existing with adenocarcinoma. He suggested that it may be the earliest phase of malignancy, not pathognomonic but a sign of cancer. Diagnostic criteria was laid down by Schroeder (1925), Taylor (1932), Schroeder (1929), Novak and Yin (1934) indicated that there is some relationship between hyperplasia and corporal cancer. Gueberg (1947) believed that there is a constant

relationship between adenomatous hyperplasia, benign and malignant adenoma and estrogen stimulation. Rutletge and Novak (1948) showed similarity between atypical hyperplasia and endometrial carcinoma. Hertig Sommen and Bengloff (1949) in their extensive study drew attention to focal and generalized adenomatous hyperplasia and development of cancer. Their studies bore no time relation to the development of cancer and adenomatous hyperplasia may regress, though in some it was found to be the precursor of endometrial cancer. Sperts' (1952) excellent paper on premalignant phase of endometrial cancer is noteworthy. Gusberg (1954), John A wall and Waner's (1957) paper are for adenomatous hyperplasia and precancerous condition. Compell Bastere (1966) and George sipper (1966) laid down criteria for diagnosing atypical hyperplasia and its importance in treatment.

Proliferative Endometrium

Anovulatory cycles are common in adolescence and before the menopause. Though the mechanism is not known, the menstrual bleeding associated with the shedding of proliferative endometrium in the second half of the cycle should always be regarded as abnormal.

HISTORY OF HYSTEROSCOPY

* Visual examination of the uterine cavity is an old technique. Pantaleoni, in 1865, was the first to examine the uterus using a small tube inserted through the external OS of the cervix with a kerosene lamp or a candle for a light source (Lindemenn 1973)

* This first examination was performed as a 60 year old woman with intractable post-menopausal bleeding and it was reported that polyp like growths were found.

* Many technical advances in the optical systems were developed in Europe at the turn of the century (Fragenhein 1987), but only in the last 25 years have fibre-optic light sources and the Hopkins lens system made hysteroscopy a practical diagnostic out-patient procedure.

Endoscopic procedure in general attained a wider acceptance after the introduction in 1952, also in France, of the “Cold Light” concept by Fourestier, Gladu and Vulmiere. This innovation permitted great improvements to be made in the equipment. In the same year, Hopkins and Kapany in England introduced fiberoptics to the field of endoscopy.

Hysteroscopy was the earliest form of endoscopy. The introduction of effective uterine distress media – high molecular weight dextran (Edstrom and Fernstrom, 1970), CO2 (Lindemann 1970), 5% dextran (Norment and Sykes, 1972) – made hysteroscopy, a practical procedure.

The microcolpohysteroscope was introduced by Hamou in 1980. The American Association of Gynaecological laprascopists (AAGL) was found in 1972. This organization has played a major role in the dissemination of endoscopic knowledge in North America and in many parts of rest of the world.

Author (PT) was preveledged to be the scientific chairman for the first practical course in hysteroscopy offered by the AAGL at the virgin masou clinic in Seattle, Washington in 1982.

HPE OF Endometrium

DUB should be evaluated promptly which is primarily associated with ovarian dysfunction and or anovulation.

1. By doing HPE of the endometrium
2. By studying the endometrial thickness using transvaginal probe
3. Direct visualization of the endometrial cavity using hysteroscopy

In evaluation of AUB, the following principles should be borne is mind.

It is essential to exclude organic diseases if necessary by repeated examination and special investigation.

The morphology of endometrium lightly responds to ovarian steroid hormones and changes in the hormones are specifically and promptly reflected in the endometrium. Endometrial biopsy is the convenient procedure traditionally used is gynaecology. Interpretation of endometrial biopsy specimens provides reasonable accurate measurement to steroid stimuli. The relative ease with which endometrium may be biopsied has permitted the histological diagnosis of the disease of the uterus and afforded opportunity to evaluate the various physiological and pathophysiological events which have an impact on menstrual function.

HISTOPATHOLOGY OF ENDOMETRIUM IN DUB

Classification of possible endocrine abnormality associated endometrial histology and typical bleeding pattern in DUB.

Type	Endocrine Abnormality and Endometrial Histology	Typical bleeding pattern
Normal ovulatory	* Short cycle – short proliferative Phase – normal endometrium * Long cycle – long proliferative phase – normal endometrium	Polymenorrhea Menorrhagia Oligomenorrhea menorrhagia
Corpus luteum abnormality	* Insufficiency – short luteal phase – irregular or deficient secretory endometrium * Persistent (Halbans disease) irregular endometrial shedding	Premenstrual spotting Menorrhagia
Anovulatory	* Insufficient follicles – short cycle inadequate proliferative or atrophic endometrium * Persistent follicle or PCOS – prolonged cycle proliferative or hyperplastic endometrium	Polymenorrhea Metrorrhagia Oligomenorrhea Metropathia haemorrhagica

Endometrial Pattern in DUB

I Ovulatory - Irregular shedding

Irregular ripening

II Anovulatory - Proliferative

Hyperplastic

- Simple cystoglandular hyperplasia
- Complex adenomatous hyperplasia without atypia
- Atypical (Adenomatous with atypia)

III Atrophic

Abnormal functional bleeding may be associated with any type of endometrium even normal secretory endometrium. This may be due to variation in vasculature of some local defect within the uterus.

Ovulatory endometrium indicates persistence of secretory changes suggesting a persistence or over activity of corpus luteal function.

To assess this pattern of bleeding, biopsy should be done in immediate post-menstrual period.

Irregular shedding

On histological examination, there is predominance of proliferative endometrium.

Irregular Ripening

First described by Traut and Kinder at al in 1935. On histological examination, there is mixture of both proliferative and secretory endometrium

Anovulatory endometrium, proliferative phase

The proliferated glandular cells are columnar and the elongated nucleus has coarse chromatin which fills most of the cell. The nuclei give a pseudostratified appearance. The cystoplasm is scanty. Cilia may be present. The stroma is heavily infiltrated with leucocytes and red cells and the vessels are thin walled and straight.

Endometrial Hyperplasia

In 1988, the nomenclature committee of the international society of Gynaecologic pathologists adopt the following modification of terms for endometrial hyperplasia.

1. Simple hyperplasia (Cystoglandular hyperplasia)

2. Complex hyperplasia (Adenomatous hyperplasia without atypia)
3. Atypical hyperplasia (Adenomatous hyperplasia with atypia)

Endometrial Hyperplasia represents a spectrum of morphologic and biologic alterations of the endometrial glands and stroma, ranging from an exaggerated physiologic state to carcinoma in situ.

Clinically significant hyperplasias usually evolve within a back ground of proliferative endometrium as a result of protracted estrogen stimulation in the absence of progestin influence.

The most recent classifications scheme endorsed by the International Society of gynaecological pathologists is based on architectural and cytologic features as well as long term studies that reflect the natural history of the lesions.

Classification of Endometrial hyperplasias

Type of hyperplasia	**Progression to carcinoma**
Simple (cystic without atyptia)	1%
Complex (adenomatous without atypia)	3%
Atypical	
Simple (cystic with atyptia)	8%
Complex (adenomatous with atypia)	29%

Simple hyperplasia (Cystoglandular Hyperplasia)

It is seen in perimenopausal women that the glands may be of varying sized and some are cystic. They are lined by multi-layered cuboidal or tall columnar epithelium. The stroma is increased and densely cellular.

Complex Hyperplasia (Adenomatous Hyperplasia without Atypia)

Microscopically there is an increase in the number and size of the endometrial glands which are crowded together with scanty stroma in between. The glands are lined by hyperplasia stratified epithelium with finger like out pouchings into the stroma as well as papillary budding of the epithelium into the glandular lumen.

Atypical Hyperplasia (Adenomatous hyperplasia with Atypia)

The lining epithelium of the glands are large, irregularly heaped up, columnar cells with large irregular nuclei and loss of polarity.

The cytoplasm has dense, abundant eosinophilic staining.

There is also back to back glandular crowding with reduction and papillary infolding of the glandular epithelium.

Atrophic endometrium

The glands are found dilated and they are lined by flat cuboidal epithelium. The stroma is edematous and sparsely cellular.

Apart from the fact that hyper estrogenic level is responsible for abnormal bleeding, psychological factors also play a role in patients perceiving uterine bleeding as excessive.

The studies with special stains expands the parameters of one observations of ovulatory and anovulatory endometrium.

The positive staining for glycogen in secretory endometrium indicates ovulatory endometrium and the positive staining for collagen in hyperplastic endometrium indicates anovulatory endometrium.

ROLE OF TVS IN AUB

Probably the commonest complaint in a woman is irregular bleeding disorders, menorrhagia etc. This forms the commonest indication for the Ultrasound examination before any invasive method.

Ultrasound scan, particularly the transvaginal route is used to assess endometrial thickness, endometrial and myometrial consistency and abnormalities of endometrial morphology like submucosal fibroid or polyp etc.

It has been recommended that in patients with menorrhagia, the uterine cavity should initially be investigated using transvaginal sonography. Transvaginal sonography is preferable to pelvic ultra sonography because of better quality of its image. This is achieved because of its higher frequency which allows greater image resolutions at the expense of decreased depth of penetrations. So transvaginal sonography can be considered a first line of investigation for women with AUB.

Ultrasonography especially transvaginal is an inexperience, non invasive, convenient way to indirectly visualize the

endometrial cavity. It is a safer, painless, convenient method of diagnosing those with pathology.

Any women who presents with AUB cannot be labeled as AUB usually as clinical examination alone can only detect 9 % percent of anatomic findings as compard to 31 % by ultrasound.

USG is helpful in excluding many patients with anatomic findings not detected by physical examination, eg. Intramural, subserous, submucous fibroids, endometrial or fibroid polyp, PCOS,congenital anomalies of uterus and endometrial carcinoma. It also helps in the evaluation of endometrium.

Thus USG has an increasingly important role in evaluating certain disorders of the endometrium. It also guides in the need for correction of anovulation depending on the age group. Thus, USG examinations provides a method of evaluating symptomatic patients and for identifying any remaining endometrium that could later on become symptomatic.

- Atrophic endometrium – very thin bright interface in the centre of the uterus.
- Endometrial Hyperplasia – Echogenic thick endometrium not correlating to the day of menstrual cycle.

An endometrial thickness of more than 18 mm at perimenopause carries a 20% risk of endometrial malignancy. If these patients are on HRT, the cut off thickness is 10 mm.

- Endometrial polyps – These polyps can be microscopic or macroscopic. A polyp of 5 mm can be visualized by TVS. If there is fluid in the endometrial canal these polyps are better delineated. Intra-luminal polyps can be diagnosed to almost 100% accuracy by high resolution.

Misplaced IUCDS

TVS can detect myometrial burying partial perforation and cervical displacement of any type of IUCD. This will help in proper planning of hysteroscope or laparoscopic removal of the misplaced IUCD.

PLACE OF DIAGNOSTIC HYSTEROSCOPY IN AUB

The diagnosis of AUB is by exclusion. The specific diagnostic approach depends on whether the patient is premenopausal, or postmenopausal. In perimenopausal patients, endometrial biopsy and other methods of detecting endometrial hyperplasia or carcinoma must be considered early in the investigation. Thus in this age group, endometrial biopsy or transvaginal ultrasonography is included in the initial investigation followed by hysteroscopy.

Hysteroscopy and USG are now being increasingly used not only for detecting functional disorders of endometrium but also for excluding various unsuspected organic diseases of the endometrium like cancer and Tuberculosis.

The way to perform a thorough hysteroscopic inspection of the uterus has been well described. It is important to perform the procedure under direct vision without routine blind dilatation, which can lead to pain and suboptimal visualization, secondary to bleeding from genital tract trauma. The operator should obtain a panoramic view of the whole cavity and orientate in relation to uterine landmarks – cornua, tubal ostia, fundus. In most cases this

is a simple procedure although a small but significant number become problematic. Good technique and an understanding of the limitation of hyperoscopic diagnosis are important.

Hysteroscopy is the standard procedure for detecting intrauterine structural pathology (Widrich). Macroscopic inspection of the uterine cavity cannot, however, make histological diagnosis directly. Within the clinical context, therefore, hysteroscopic diagnosis incorporating morphological features would be better classified as normal, abnormal (thickened), abnormal (suspicion) or abnormal (cancerous), consistent with the capability of the technology. (Bakour).

Studies comparing hysteroscopy with traditional D and C have suggested that the former is superior. However the existing data supporting the use of hysteroscopy is generally related to detection of benign disease and structural pathology. Hysteroscopy appears to be better than ultra-sonography in detecting intra-uterine structural pathology (clerk) although results with saline infusion sonography are similar (Soares).

Subgroup analysis suggests that diagnostic accuracy of both outpatient and inpatient hysteroscopy was high for endometrial

cancer, although there was a trend towards higher accuracy in the outpatient setting (Clark). The video imaging and small diameter endoscopes (<5mm diameter) also improved accuracy.

The introduction of outpatient of diagnostic procedure has benefited both patients and the health service in terms of convenience, reduced morbidity and costs. Following this diagnostic process and inpatient surgical intervention such as D&C, polypectomy, endoscopic procedure or hysterectomy is often recommended. Intra-uterine structural pathology (eg.endometrial polyps and sub-mucous fibroids) is found in around 25 percent of women with abnormal uterine bleeding and accounts for much of this surgical activity.

The same advances in endoscopic technology that helped outpatient hysteroscopic diagnosis happen now offer the possibility of outpatient hysteroscopic treatment for such conditions like polyps, intracavity fibroids, septas and adhesions. However inpatient endoscopic treatment of these conditions has been recommended (RCOG press).

MATERIALS AND METHODS

PATIENT POPULATION

Our study includes 50 women age varying between 28 to 55 years who were admitted. We included only the patients with technical success in transvaginal sonography and Hysteroscopy in this study. Finally 50 patients with pathological confirmation were included in this study. All 50 patients were first evaluated with transvaginal sonography followed by Hysteroscopy and traditional curettage with cervical biopsy performed after 2 days following transvaginal sonography. The pathological findings are then correlated with ultra-sound finding and diagnosis by hysteroscopy.

Criteria for Selection

1. Patients who had AUB for more than 6 months were selected
2. Patients in Reproductive and perimenopausal age were selected
3. Both Nulliparous and parous women were included
4. Patients in pubertal age group were excluded
5. Both treated and untreated patients were taken

6. Patients with any temporary method for the past 6 months were excluded
7. Patients who underwent abortion were excluded
8. Patients with any other medical or surgical illness were excluded
9. Lactating mothers were excluded

Ethical committee approval and informed consent from the patients taken. Patients are also investigated if they have Intra-uterine device or not, oral contraceptive use, regular drug or hormonal preparation usage. Former gynaecological operations and applications recorded. Patients detected to be pregnant are not included in the study.

Transvaginal ultra-sonography is applied with 7 MHZ vaginal probe to all patients who were selected for research.

Cervix, cervical canal, myometrium and ovaries were examined is saggital and coronal section. After inspection of morphological pattern of endometrium, endometrial thickness of external borders measured and recorded in thickest place in longitudinal place.

DIAGNOSTIC HYSTEROSCOPY

INSTRUMENTATION :

TELESCOPES

The most important piece of equipment for hysteroscopy is the lens or telescope. The optics as well as the fiberoptic illumination bundles are packaged together in this single instrument. Most rigid telescopes range in diameter from 2 to 4 mm (o.d.). The best light shower and optical resolution are likely to be found in 4 mm (o.d.) instruments. However, for office hysteroscopy, as well as operative procedures, a 3 mm telescope can Produce an acceptable video image particularly when magnified by means of a zoom video camera.

The smaller telescope permits the operator to employ a smaller sheath. Although flexible telescopes are now finding their way onto the market, they suffer from inferior resolution compared to that of the rigid equipment. The most convenient length for the hysteroscopic telescope is 35 cm. Shorter instruments offer no advantage and some distinct disadvantages when coupled to operative sheaths. The telescope consists of three major parts:

- The magnifying eyepiece.
- The transmitting lens system.
- The objective lens

The most commonly used terminal objective lenses provide a straight on view (0^0) or offset view (30^0). Selection of the lens is a matter of personal preference but for the best panoramic operative view the 0^0 lens is recommended, particularly when using laser fibers or flexible or semirigid operating accessories. Rigid lenses are fragile and must be handling, steam autoclaving, improper liquid disinfection and inadequate cleaning will shorten the life of the telescope and require expensive repairs as well as system down time. A properly cared for lens will last a lifetime and provide excellent service over and over again. Located just below the eyepiece is the fiberoptic coupling connection. At this location the fiberoptic cable joins, the telescope. Each lens manufacturer has a unique coupling. Several companies supply attachments that permit a variety of cables to join their particular instrument. The latter is an advantage since any light generator and light cable can be used with a given telescope.

FIBEROPTIC LIGHT CABLE

Fiberoptic cables transmit intense cold light to the telescope and form a conduit, which connects the high intensity (heat producing) generator to the telescope. The cable is filled with many incoherent drawn-out glass fibers capable of conducting light from the generator to the terminus of the cable. Obviously these cables are fragile and can be easily damaged if not handled carefully. Inspection of the end of the cable will readily determine whether fibers or groups of fibers have been broken. These are indicated by dark spots in an otherwise intense light shower.

Inspection of the periphery of the cable in a darkened room can also reveal fiber disruption. This appears as light transmission through the sides of the cable. Poor light at the end of the telescope is almost always due to a damaged cable. The only alternative to substandard light is to replace the cable. Cable should be disinfected by soaking in cidex (glutaraldehyde) for 15-20 minutes, followed by thorough washing in sterile water. At the end of the case, the fiber should be washed again, resoaked and cleansed again with water. The cable should then be stored dry in a protective container. Most hospitals and surgicenters have replaced liquid

disinfect on with gas sterilization. The only drawback to the latter is the long period required for aeration.

Light Generator

Several varieties of light generators are available on the market. These range from simple and inexpensive tungsten light generators (US $500-700) to costly xenon generators US$2000-5000). For office use a simple apparatus will suffice, however, hysteroscopy performed in the operating room under video control demands intense light. Xenon (300W) generators produce white light which is most favourable when coupled with endoscopic television cameras (Baggish, 1997). Characteristically the simpler tungsten light generators produce an orange tinted light which creates a rather poor color on the video monitor. Between these two types of generator are the 250 W metal halide generators. These produce intense light, which is adequate for video images, but characteristically give off a bluish tinge. The light bulbs in all these generators produce a lot of heat, so a fan is built into the cabinet to dissipate the heat and prolong bulb life. .

Light generators and fiberoptic cables can be used interchangeably for hysteroscopy or laparoscopy. Obviously the

more powerful generators are required for laparoscopy. All generators should be appropriately grounded and should be periodically inspected (and indexed) biomedical engineering for low frequency electrical leakage.

Hysteroscopic Sheaths

Two general categories of sheaths are used for hysteroscopic procedures: diagnostic and operating. A sheath is required for panoramic hysteroscopy in order to serve as a conduit through which to instill the distending medium into the uterine cavity. The diagnostic sheath fulfils this singular requirement and measures approximately 4-5m in outer diameter (when coupled to a 3-4 mm telescope). The sheath is essentially a hollow stainless steel tube equipped with a proximal port through which the distending medium is injected. The telescope must couple tightly to the sheath with sufficient seal to prevent medium leakage at the telescope/sheath, interface. The objective lens of the telescope should fit precisely, flush with the end of the sheath to produce an unobstructed view. Therefore each given manufacturer's lens must be matched correspondingly to the same manufacturer's sheath.

The coupling mechanisms differ for different hysteroscopes, preventing the interchange of lenses and sheaths.

A 5 mm sheath ordinarily will allow passage through nulliparous cervices without resorting to dilatation. A 4 mm sheath equipped with a 3 mm telescope can negotiate the endocervical canal most easily than the 5 mm sheath., and is ideal in the office setting. They are therefore ideally suited to office hysteroscopy. Hysteroscopic sheaths are sturdy and stand up to routine handling. They may be steam autoclaved. Obviously they should be thoroughly flushed and cleansed after usage and stored away clean. The stopcock mechanism should be disassembled, cleaned, lubricated and reassembled after each usage. The stopcock should be turned to the open position when stored, from time to time the sheath as well as the shaft of the telescope should be polished with a high quality.

ABNORMAL UTERINE BLEEDING

Abnormal uterine blooding is the most common complaint of patients consulting the gynecologist and provides the most frequent indication for hysterectomy. D and C has been the diagnostic method of choice for many decades for these cases.

However, for diagnosing non-malignant intrauterine pathology such as endometrial polyps. and intrauterine leiomyoms which may cause uterine blooding disorders, D and C appears to be unreliable (Wamsteker, 1977, 1984a; Gimpelson and Rappold. 1988. Loffer 1989; Motashaw and Dave. 1990).

Direct hysteroscopic inspection with adequate distention and visualization discloses almost every intrauterine abnormality with high accuracy. Additionally, it enables exact localization of the pathology and determination of its intracavitary extent. However, for the diagnosis of endometritis and adenomyosis, conclusive hysteroscopic criteria are still lacking.

For histologic examination selective samples of any abnormal tissue can be obtained by visually controlled biopsies. A significant percentage of benign intrauterine pathology disclosed by hysteroscopic diagnosis in patients with abnormal uterine bleeding can be treated with minimally invasive transcervical hysteroscopic endosurgery.

As the majority of intrauterine disorders resulting in abnormal uterine bleeding in the reproductive phase of life, the climacteric and the postmenopausal period, are benign types of

pathology, D and C can be longer hold its position as the primary diagnostic method for patients with abnormal uterine bleeding. Today ambulant or outpatient hysteroscopy with visually directed biopsies or directed curettage is to be recommended as the diagnostic method of choice for these cases.

With the more recently developed continuous how (CF) technique the surface structure of the endometriun can be observed with very low intrauterine pressure, which prevents compression of the soft tissue of the mucosa and also reduces the transtubal flow of the distention medium.

Extensive studies have not indicated any negative effect of abdominal spill of the gas or liquid used for distention of the uterine cavity in panoramic hysteroscopy in cases of endometrial cancer (Wamsteker, 1977, Neis et al ,1994.

Review of the literature does not indicate that hysteroscopy with abdominal spill of the distention medium should be considered more hazardous in cases of endometrial cancer than D and C used alone. Although D and C will seldom fail to disclose endometrial cancer and hyperplasia, hysteroscopic investigation additionally enables the early detection of small endometrial cancers and

determination of the localization, size and extent of the neoplasia and /or its precursors. Notwithstanding the above-mentioned considerations it seems to be sensible to recommend reducing transabdominal spill of distention medium as much as possible in these cases. This can be achieved reducing the intrauterine working pressure during hysteroscopy in cases suspected of endometrical cancer.

Specific indications for hysteroscopic diagnosis in patients with abnormal uterine bleeding are:

- Hypermenorrhea or menorrhagia.
- Metrorrhagia
- Intermenstrual bleeding
- Postmenopausal bleeding
- Intrauterine or endometrial abnormality on TVS or HSG.

In cases of cervical dysplasia or malignancy accurate in vivo diagnosis on a cellular level can be performed with contact microcolpohysteroscope (Hamou, 1981). However, experience with determining cytologic pathology is a prerequisite for this technique.

Patients admitted, evaluated to rule out systemic illness and then subjected to hysteroscopy after informed consent. Under strict aseptic precautions, under Total intra-venous Anaesthesia, patient put in Lithotomy position KARL STORZ hysteroscope introduced. Cervical canal examined followed by a panoramic inspection of whole endometrial cavity in relation to uterine landmarks – cornea, tubal ostia and fundus.

Atophic endometrium is thought, when the cavity is thin, pale, smooth surface and sometimes tiny petechial bleeding seen.

Endometrial tissue covering smooth surface – pedunculated or non-pedunculated structure are evaluated as polyp. Lesions not concerned with endometrium, shiny as pearl, sessile appearing and vascularisation are submucous myomas.

If endometrial surface is smooth or thickened in polypoidal appearance, when pressed wit hysteroscope, endometrial groove is seen it is called Hyperplasia. When this thickening is together with high grade irregularity, it is called Atypical Hyperplasia. If necrotic areas, glandular and vascular disorganization is present in addition to this appearance endometrial carcinoma is thought of.

Dark red coloured relatively with smooth surface or lesions seen independent from necrotic endometrium are evaluated as retention of placental tissue. All other finding except from above are accepted as normal endometrium.

Normal endometrium and atrophic endometrium are accepted as normal hysteroscopic findings. Dilatation and curettage is performed to all patients. Obtained material is preserved in formulin and sent to Histopathology laboratory for confirmation of diagnosis. Endometrial hyperplasia, polyp, myoma and placental polyps are accepted as pathological results.

When no material is obtained and histological finding as secretory endometrium, proliferative endometrium, normal and Atrophic endometrium are evaluated. Chi square and Fischer extract tests are used to compare the rates P value < 0.05 is accepted as significant.

ANALYSIS OF THE STUDY

Table – 1

Age Distribution

Age in Years	No.of patients	Percentage
Reproductive age group		
20 - 30 yrs	10	20 %
30 – 40 yrs	25	50 %
Perimenopausal age group		
40 – 50 yrs	15	30%

Age Distribution :

Analysis of women age wise revealed that 10 out of 50 patients belonged to 20-30 years.

Among 50 patients, 35 of them belonged to reproductive age group and 15 of them to perimenopausal age group.

Most of the people in the study belonged to 30-40 yrs of age.

Table – 2

Socio economic Status

	I	II	III	IV	V
Reproductive age group	0	0	0	13 (26%)	22 (44%)
Perimenopausal age group	0	0	2 (4%)	5 (10%)	8 (16%)

Among reproductive age group, 44% of the patients belong to class V, socio economic status 26% belong to class IV socio economic status. Among perimenopausal age group, 16% patients belong to class V socio economic status, 10% belong to class IV and 4% belong to class III socio economic status.

Table – 3

Previous Treatment

	Treated		Not treated	
	No.	%	No.	%
Reproductive age group	7	14	28	56
Perimenopausal age group	8	16	7	14

14% of patients in reproductive age group had treatment previously while 16% of patients in perimenopausal age group had been treated previously for AUB.

Table - 4

Among the treated patients, type of treatment given

	Placebo		Hormones		Non hormone		D&C	
	No	%	No	%	No	%	No	%
Reproductive age group								
20 - 30 yrs	2	4	0	0	0	0	0	0
30 – 40 yrs	2	4	2	4	0	0	1	2
Perimenopausal age group								
40 – 50 yrs	5	10	1	2	2	4	0	0

Most of the patients in reproductive age group were given hormonal treatment when compared to patients in perimenopausal age group. Placebo was given to many patients. Non hormonal treatment like antifibrinolytics were given to 4% of perimenopausal age group. In 2 % of the patients in reproductive age group, dilatation and curettage was done.

Table – 5

Pattern of Cycle

	Regular		Irregular	
	No	%	No.	%
Reproductive age group	27	54	8	16
Perimenopausal age group	4	8	11	22

54% of patients in reproductive age group had regular menstrual cycle while 16% patients had irregular cycle.

Among perimenopausal age group, 22% of patients had irregular cycles and 8% of the patients had regular cycle.

Table – 6

Menstural flow patterns

	Excess flow		Prolonged flow		Excess and prolonged	
	No	%	No	%	No	%
Reproductive age group	18	36	6	12	11	22
Perimenopausal age group	4	8	4	8	7	14

36% of patients in reproductive age group had menorrhagia, 12% had hypermenorrhea while 14% of patients in perimenopausal age group suffered from menorrhagia.

Table – 7

Parity

	Nullipara		Unipara		Multiparous (2-5)		Multiparous (>5)	
	No	%	No	%	No	%	No	%
Reproductive age group	3	6	9	18	23	46	0	0
Perimenopausal age group	1	2	5	10	7	14	2	4

In reproductive age group, 6% of patients were nulliparous, 18% uniparous and 46% were multiparous women.

In perimenopausal age group, 2% patients were nullipara, 10% were uniparous and 4% patients multipara.

Table – 8

Contraception and DUB

	No contraception		Permanent contraception		Temporary					
					DC		IUCD		Others	
	No	%	No	%	No	%	No.	%	No	%
Reproductive age group	10	20	15	30	3	6	7	14	0	0
Perimenopausal age group	3	6	12	24	0	0	0	0	0	0

Patients who have undergone sterlisation had increased incidence of AUB. Probable reason may be

1. The blood supply to the ovary is altered
2. The axis of ovary is sometimes changed due to adhesions.

Table – 9

Pain with AUB

	Patients with pain		Patients without pain	
	No	%	No	%
Reproductive age group	28	56	7	14
Perimenopausal age group	5	10	10	20

56% of patients in reproductive age group had ovulatory AUB which 20% of patients among perimenopausal age group had anovulatory AUB.

Table – 10

Weight of the patient

	Within the ideal weight		More than Ideal weight	
	No	%	No	%
Reproductive age group	22	44	13	26
Perimenopausal age group	4	8	11	22

44% of the patients among reproductive age group were within ideal weight while most of the perimenopausal patients with AUB had more weight.

Table – 11

Blood grouping

	A		B		O		AB		Rh Typing			
									+ve		-ve	
	No	%	No	%	No	%	No	%	No	%	No	%
Reproductive age group	2	4	27	54	5	10	1	2	33	66	2	4
Perimenopausal age group	4	8	7	14	2	4	2	4	14	28	1	2

It was an incidental finding that among the study group, most of them belong to the B group.

No other bleeding disorders were noted among the study group. No other thyroid dysfunction was detected.

Table – 12

TVS Endometrial thickness

	Endometrial Thickness											
	1 mm		1-3 mm		3- 5 mm		5 – 8 mm		8 – 10 mm		> 1 cm	
	No	%	No	%	No	%	No	%	No	%	No	%
Reproductive age group	0	0	15	30	19	38	1	2	0	0	0	0
Perimenopausal age group	0	0	5	10	1	2	5	10	3	6	1	2

In the study of the endometrial thickness of the reproduction age group, pencil line endometrium was nil, 15 had 1-3 mm, 19 patients 3-5mm thickness, 1 had 5-8mm thickness, non had > 1 cm thickness.

Among perimenopausal age group, pencilline endometrium was nil, 5 had 1-3mm thickness, patient had 3-5mm thickness and 3 patients had 8-10mm thickness and 1 patient had thickness > 1cm.

Table – 13

HPE Report

	Atropic		Proliferative		Secretory		Adenomatous		Atypical		AdenoCa		Endometritis		Cystoglandular hyperplasia	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Reproductive age group	0	0	16	32	11	22	1	2	0	0	0	0	1	2	6	12
Perimenopausal age group	0	0	5	10	6	12	0	0	0	0	0	0	0	0	4	8

In the reproductive age group HPE consisted mostly of proliferative (32%) and secretory (22%) pattern. One case of Adenomatous pattern and 1 case of endometritis detected 12 % cases of cystoglandular hyperplasia were noted.

In the perimenopausal age group, 12% of secretory changes, 10% with proliferative changes and 8% of cases with cystoglandular hyperplasia were noted.

Table – 14

Biopsy Ectocervix

	Normal cervix		Inflammmatory condition		Cervicitis		Dysplasia	
	No	%	No	%	No	%	No	%
Reproductive age group	12	24	18	36	5	10	0	0
Perimenopausal age group	2	4	9	18	3	6	1	2

Among reproductive age group, 12 cases were normal, 18 cases of ectocervical biopsy revealed inflammatory changes, 5 cases – cervicitis. Among perimenopausal age group, 2 cases were with the normal ectocervix, 9 cases showed inflammatory changes, 3 cases were with dysplasia, 1 case with dysplastic change.

Table - 15

Distribution of uterine pathology regarding TVS

Uterine Pathology	No.of cases	%
Hyperplasia	9	18
Polyp	5	10
Myoma	2	4
Polyp + Myoma	0	0
Cancer	0	0
No pathology	34	68

In both reproductive and perimenopausal age group, according to transvaginal sonography, 9 cases showed endometrial hyperplasia, 5 cases were with endometrial polyp, 2 cases showed submucous myoma and the remaining 34 cases were with nil pathology.

Table - 16

Distribution of Uterine pathology regarding hysteroscopy

Uterine Pathology	No.of cases	%
Hyperplasia	15	30
Polyp	12	24
Myoma	2	4
Polyp + Myoma	1	2
Cancer	0	0
No pathology	20	40

According to hysteroscopy, 15 cases were diagnosed with endometrial hyperplasia, 12 cases showed endometrial polypoidal growths, 2 cases were diagnosed as submucosa myoma, 1 case as with both endometrial polyp and submucosa myoma and 20 cases showed no pathology.

Table – 17

Distribution of Uterine pathology regarding D & C

Uterine Pathology	No.of cases	%
Hyperplasia	10	20
Polyp	5	10
Myoma	0	0
Polyp + Myoma	0	0
Cancer	0	0
Adenomatous	1	2
Endometritis	1	2
No pathology	33	66

According to dilatation and curettage biopsy, 10 cases (20%) showed cystoglandular hyperplasia, 5 cases (10%) showed polypoidal growth, 1 case (2%) of endometritis and 33 cases (66%) were with normal histopathology.

Table - 18

Distribution of Intra uterine pathology according to TVS, D&C hysteroscopy

	TVS and D&C		Hysteroscopy and D&C	
	No	%	No	%
Hyperplasia	9	18	15	30
Polyp	5	10	12	24
Myoma	2	4	2	4
Polyp + Myoma	0	0	1	2
Cancer	0	0	0	0
No pathology	34	68	20	40

DISCUSSION

Abnormal uterine bleeding is a common problem (Couher) and is the main indicator for hysteroscopic evaluation. Hysteroscopy and USG are now being increasingly used not only for detecting functional disorders of endometrium, but also for excluding various unsuspected organic diseases of the endometrium like cancer and tuberculosis.

In this series 50 patient with AUB were taken for study. For all 50 patients, TVS, hysteroscopy and D&C were done in the premenstrual phase and analysis of the study has been done. The study period consisted of 2 years – during the year 2008 – 2009 in Government Rajaji Hospital. Majority of the patients belong to reproductive age between 30-40%. Only 30% belong to the age group of 20-30 years.

All the 50 patients were married, out of which 6 were widowed.

- Regarding the parity, in the reproductive age group, most of them are multiparus (46%), uniparous 18%, and nulliparaous 6% . In the perimenopausal age group, multiparous were 18%, uniparous 10% and nulliparous accounted for 2%.

- The flow pattern and cycles varied and were analysed according to the individual picture.
- It was found that most of the patients around were sterlised.
- In the reproductive age, 44% were within ideal weight and in premenopausal age, there was 22% increased weight.
- Most of them belonged to the B group according to our study.
- In all the patients, endometrial thickness measured by Sonogram was compared with HPE.
- Comparing the distribution and diagnosis of intra uterine pathology according to transvaginal sonography, D&C and hysteroscopy showed that 30% hyperplasia was detected by combination of hysteroscopy and D&C whereas TVS and D&C could detect only 18% of hyperplasia.
- Combination of hysteroscopy and D&C could detect 24% of cases with endometrial polyp while TVS and D&C could detect only 10% of cases with endometrial polyp.
- Both combination of transvaginal sonography and D&C could detect 4% of cases as with sub mucous myoma but combination hysteroscopy and D&C in addition, could detect 2% of case as with both myoma and polyp.

- 40% of cases showed no pathology according to diagnostic hysteroscopy and D&C whereas TVS and D&C could not detect any pathology in 68% of AUB cases.
- Thus combination of diagnostic hysteroscopy and D&C has better diagnostic value when compared with transvaginal sonography and D&C.

SUMMARY

- A total of 50 cases of DUB have been selected. 35 from reproductive age group and 15 from perimenopausal age group. These patients were subjected to TVS, hysteroscopy and D&C on two successive days in the premenstrual phase.
- Among the reproductive age group, 20% belong to the age of 20-30 year and 50% belong to age between 30-40 years.
- Married and widowed women were included.
- Nulliparous, Uniparous and multiparous were taken into study.
- Other diseases like bleeding disorders were excluded.
- TVS, diagnostic hysteroscopy and D&C were done in premenstrual phase.
- There was excellent correlation of endometrial thickness with that of HPE of endometrium. Most patients with 3-5mm thickness were of secretory and proliferative pattern.
- There were no complications encountered during the above said procedures.
- Blood group of B was an incidental finding and there is no literature to support a particular group in AUB.

- Most of the endometrial hyperplasia, myomas and polyps were diagnosed by diagnostic hysteroscopy when compared to TVS or D&C.
- Diagnostic hysteroscopy can be done in an office setting as a day care procedure and is considered as a safe procedures with minimal complications.
- Women with menorrhagia under 40 may require hysteroscopic investigation if intra uterine pathology is suspected following transvaginal ultrasound scan or due to severity and persistence of symptoms despite recommended medical treatment (RCOG)
- Hysteroscopy combined with histological examination is considered as “Gold standard” for evaluating a case with abnormal uterine bleeding. (Widrich et al, Bakour).

CONCLUSION

Abnormal uterine bleeding (AUB) is one of the most commonly encountered condition in OPD. The most probable cause of abnormal uterine bleeding depends on the patients reproductive age and the likelihood of endometrial pathology.

Achary V, Mehte S and Rander A is March 2003, studied 100 patients and concluded that for detecting submucous myomas and endometrial polyp, hysteroscopy has 100 percent sensitivity, specificity and very high positive and negative predictive values. They concluded that in the diagnosis and management of AUB cases, the non invasive TVS should be of first choice. But hysteroscopy followed by curettage and histopathology will improve the accuracy of clinical diagnosis.

Organic pathologies which cause abnormal uterine bleeding such as endometrial polyp, myoma and endometrial hyperplasia – that are commonly not identified by blind dilatation and curettage are diagnosed readily by hysteroscopy.

Since the incidence of focal lesions in patient with AUB is high, it seems that most beneficial approach is to proceed with hysteroscopy complemented by endometrial biopsy early in the assessment of AUB. So, hysteroscopy with endometrial biopsy is the gold standard investigation for AUB.

Before hysteroscopy was available, curettage was the primary method of evaluating abnormal uterine bleeding. Brooks and Serden have revealed that approximately half of pedunculated abnormalities such as endometrial polyp were missed by curettage. It renders endometrial sampling blind and incomplete, so that the diagnostic accuracy of curettage is less than that of hysteroscopy followed by curettage biopsy. So, hysteroscopy combined with histological examination is considered better than TVS and D&C.

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PROFORMA

Name OP/ IP No. Unit

Age Income Date of Adm.

Address Date of Dis.

Date of Operation :

Socio economic Status of the Patient:

Parity :

Use of oral Contraception :

Complaints with Duration :

- Previous Medical/ Surgical History :
- Family History :
- Gynaec. History :
- Menarche :
- Period : Cycle Length: Duration of flow:
- Amount of flow: Moderate: Profuse: Scanty:
- Pain with Menstruation :
- Other symptoms :
- Intermenstrual spotting :
- Marital History Married Widow
- Obstetric History : Type of Deliveries LCB
- Contraception : Temporary
  Permanent
- General Examinations :
  Obesity : Anaemia :
  Breast : Thyroid :
- Systemic Examination : 1. PR 2. BP 3. CVS
  4. RS 5. Abdomen 6. CNS
- Gynaecological Examination: P/A :
  P/V : S/E :
  P/R :
- Investigation : Ht: Wt: Hb% Blood Grouping:
  Urine: Albumin Sugar BT: CT:
  USG
  Hystroscope Findings:
  Follow up

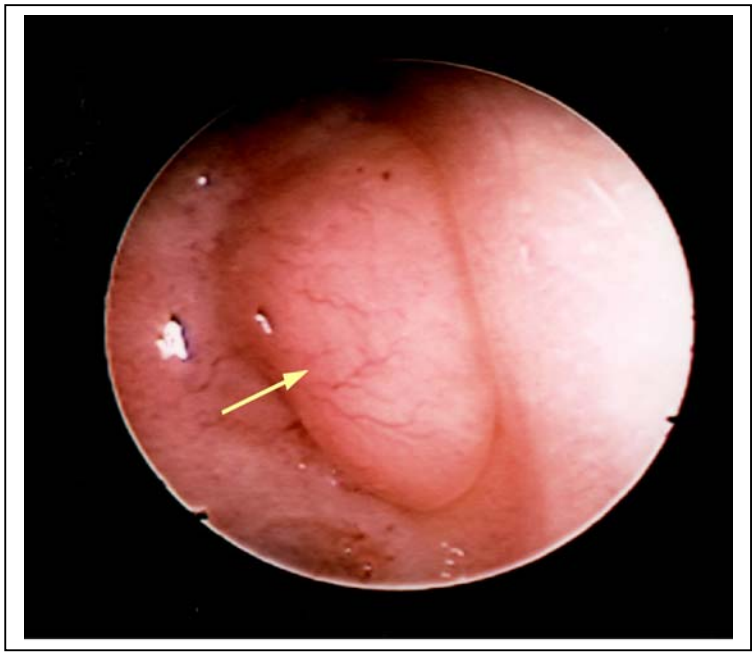
1. D & C 2. HPE

ABBREVIATIONS

AUB	ABNORMAL UTERINE BLEEDING
TVS	TRANSVAGINAL SONOGRAPHY
D&C	DILATATION AND CURETTAGE
HPE	HISTOPATHOLOGICAL EXAMINATION
USG	ULTRASONOGRAPHY
CGH	CYSTOGLANDULAR HYPERPLASIA
EH	ENDOMETRIAL HYPERPLASIA
EP	ENDOMETRIAL POLYP
SM	SUBMUCOUS MYOMA
T	TREATED
NT	NOT TREATED
R	REGULAR
IR	IRREGULAR
N	NORMAL STUDY

HYSTEROSCOPY

ENDOMETRIAL POLYP



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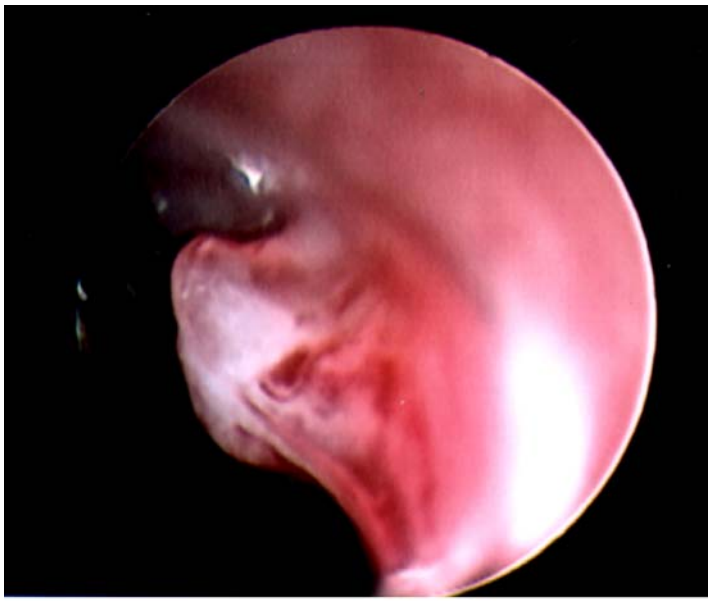
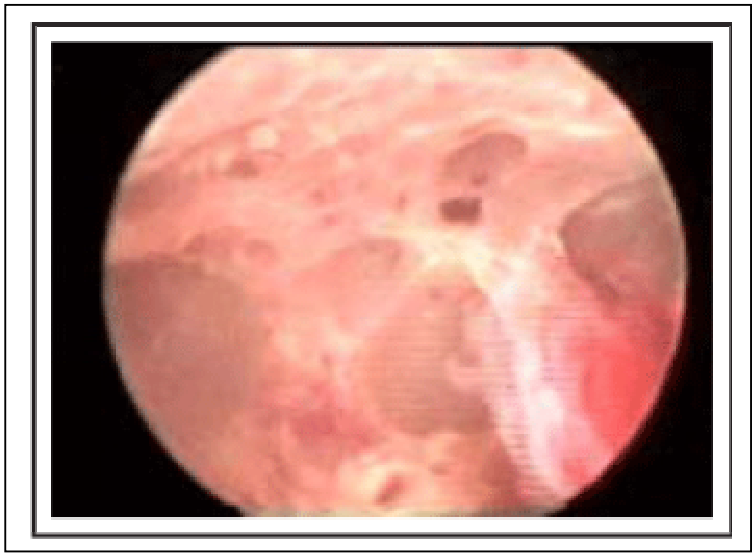


ENDOMETRIAL HYPERPLASIA

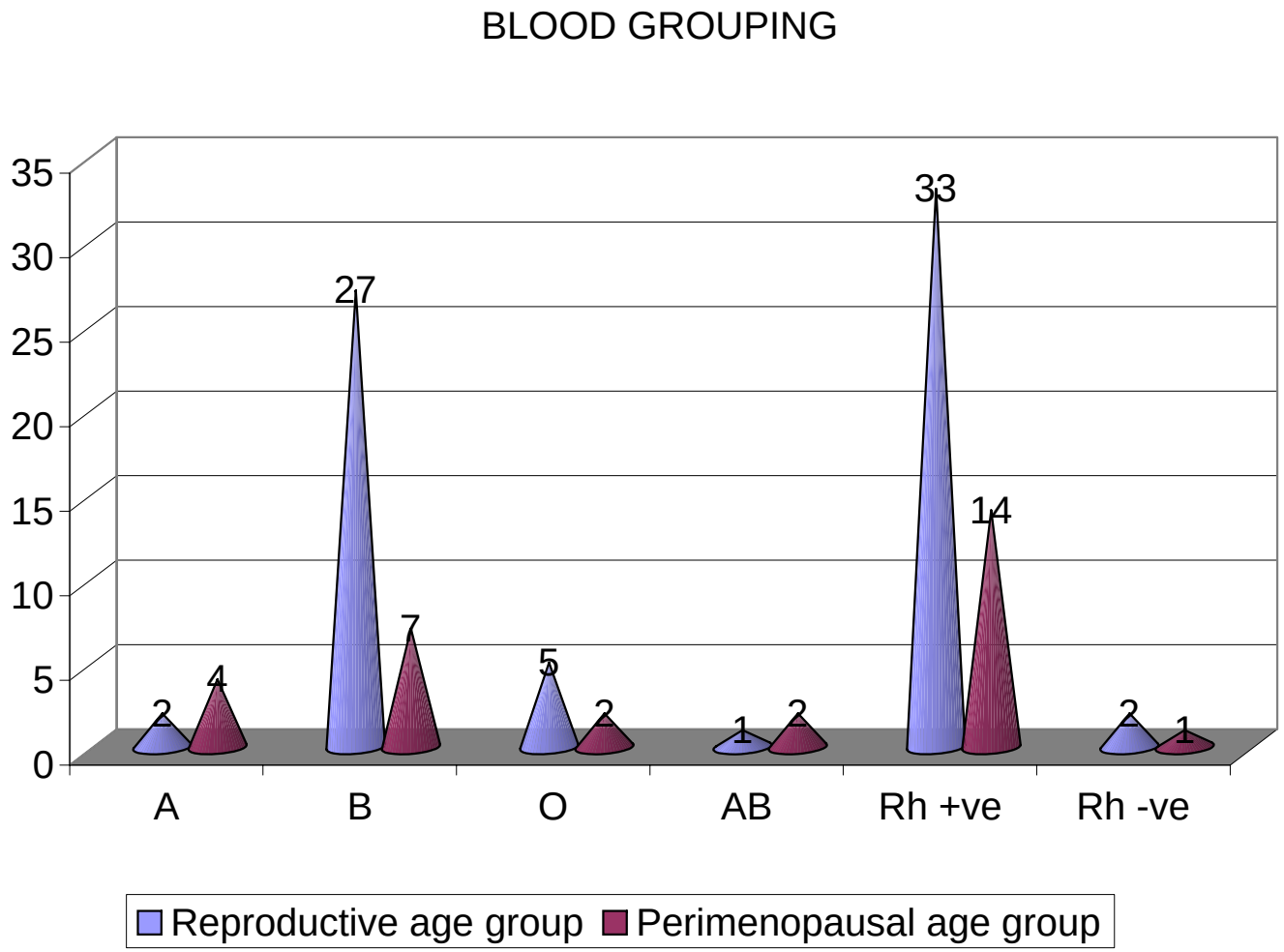
ENDOMETRIAL HYPERPLASIA



RIGHT TUBAL OSTIA

MASTER CHART																		
S.No.	Name	IP No	Age	Parity	SE status	Weight	H/o Previous treatment	Menstrual cycle pattern	Contraception used	Pain with AUB	Blood group	Endometrial thickness	USG findigns	Hysteroscopy findings	HPE Reprot	Biopsy ectocervix	D&C + TVS	D&C + Hysteroscopy
1	Janaki	415197	47	3	V	60	T	IR	-	+	B +ve	9	EH	EH	CGH	Cervicitis	EH	EH
2	Backiam	155726	42	3	V	73	NT	R	+	-	A +ve	3	N	N	Proliferation	Inflammatory	N	N
3	Chandra	470248	30	1	IV	42	NT	R	-	-	B +ve	3	N	N	Secretory	N	N	N
4	Maryma	470235	32	2	IV	40	NT	R	+	+	B +ve	3	S. Myoma	S. Myoma	Proliferation	Cervicitis	SM	SM
5	Vasantha	490395	31	1	V	45	NT	IR	+	-	O +ve	2	N	N	Secretory	N	N	N
6	Murugeswari	41515	30	2	IV	67	NT	R	-	+	O +ve	3	End.polyp	EP+SM	Proliferation&polyp	N	EP	EP&SM
7	Tamilselvi	70971	48	3	IV	72	T	IR	+	-	B +ve	6	N	EP	Proliferation	Inflammatory	N	EP
8	Selvi	70989	32	0	IV	32	T	R	+	+	B +ve	6	N	EP	Proliferation&polyp	N	N	EP
9	Murugeswari	18349	33	1	V	60	NT	IR	-	+	B +ve	2	N	N	Secretory	N	N	N
10	Saraswathy	36410	40	4	V	70	NT	R	+	+	O +ve	7	N	EH	Proliferation	Inflammatory	N	EH
11	Guruvammal	41360	43	3	IV	48	NT	R	+	+	B +ve	6	N	EH	Proliferation	Inflammatory	N	EH
12	Pandiammal	41347	48	1	V	52	T	IR	-	+	B +ve	8	EH	EH	Proliferation	Cervicitis	EH	EH
13	Alagu	76171	40	4	V	48	NT	R	-	+	B +ve	2	N	N	Secretory	N	N	N
14	Petchiammal	700613	40	3	V	62	NT	R	-	+	O +ve	3	N	EP	Proliferation&polyp	Inflammatory	N	EP
15	Arumugam	41632	45	6	V	78	T	IR	+	-	B +ve	7	Myoma	SM	Proliferation	Inflammatory	SM	SM
16	Kalaiyarasi	41615	40	2	V	55	NT	R	+	+	B +ve	3	EH	EH	Secretory	N	EH	EH
17	Meenammal	40105	35	1	IV	60	T	R	+	-	B +ve	6	N	EP	Proliferation	N	N	EP
18	Gomathi	10564	43	1	IV	52	NT	IR	+	+	A +ve	6	End.polyp	EP	Proliferation	N	EP	EP
19	Saraswathy	37217	29	4	IV	48	NT	IR	-	-	B +ve	2	N	N	Secretory	Cervicitis	N	N
20	Maheswari	41627	28	2	IV	75	T	R	-	+	O +ve	2	N	N	Secretory	Inflammatory	N	N
21	Shanthi	41946	35	1	V	62	NT	R	+	+	B +ve	3	N	N	Adenomatous	Inflammatory	N	N
22	Vasantha	42041	28	3	IV	72	NT	IR	+	-	B +ve	2	N	EP	Proliferative	Inflammatory	N	N
23	Jeyakodi	42044	37	4	V	55	NT	R	-	+	B +ve	3	EH	EH	CGH	Inflammatory	EH	EH

24	Valli	19731	47	1	V	40	NT	IR	+	-	B +ve	2	N	N	Secretory	Inflammatory	N	N
25	Maruthi	105697	45	1	III	42	NT	IR	+	+	B +ve	2	N	N	Secretory	Inflammatory	N	N
26	Karuthaveena	107538	45	3	V	55	NT	R	+	-	B +ve	> 1cm	EH	EH	CGH	Inflammatory	EH	EH
27	Deepa	107555	28	5	III	80	T	IR	-	-	A +ve	3	N	N	endometritis	Cervicitis	N	N
28	Shanthi	10078	35	1	IV	70	NT	R	+	+	B +ve	3	N	N	Secretory	Inflammatory	N	N
29	Ponnu	79518	38	5	V	45	NT	R	+	+	O +ve	3	EH	EH	CGH	N	EH	EH
30	Nageswari	79507	27	1	V	50	T	IR	-	+	B +ve	3	N	EH	CGH	Cervicitis	N	EH
31	Pappathy	11102	44	1	IV	52	T	R	+	-	B +ve	2	N		Secretory	N	N	N
32	Muthumari	97019	41	3	V	40	NT	R	+	-	A +ve	9	EH	EH	CGH	Inflammatory	EH	EH
33	Selvi	12782	33	0	V	72	NT	R	-	+	B +ve	3	EH	EH	CGH	Inflammatory	EH	EH
34	Rajalakshmi	13989	30	2	IV	75	NT	IR	-	-	B +ve	3	EH	EP	Proliferative+polyp	N	EH	EP
35	Taj Nisha	18385	37	4	V	71	T	R	-	+	B +ve	3	EP	EP	Proliferative+polyp	Inflammatory	EP	EP
36	Kokila	45608	45	3	IV	88	NT	R	+	-	O +ve	2	N	N	Secretory	Inflammatory	N	N
37	Savithiri	98072	53	0	III	90	T	IR	-	-	B +ve	2	N	N	Secretory	Dysplasia	N	N
38	Gnanam	95058	26	1	V	48	T	R	+	+	AB +ve	3	N	EP	Proliferative	Cervicitis	N	EP
39	Latha	90312	32	3	V	45	NT	R	+	+	B +ve	3	N	EH	Secretory	Inflammatory	N	EH
40	Andichi	53757	30	4	V	47	NT	R	+	+	B +ve	2	N	EP	Proliferative+polyp	Inflammatory	N	EP
41	Rajathi	91641	28	2	IV	55	NT	IR	-	+	A +ve	3	EP	EP	Proliferative	N	E Polyp	EP
42	Chinnakaruppu	913217	40	2	V	48	NT	IR	+	+	B +ve	2	N	EH	Proliferative	Inflammatory	N	EH
43	Kaliammal	42021	38	3	V	60	NT	R	+	+	O +ve	2	N	N	Secretory	N	N	N
44	Ponnuthai	73676	25	1	V	68	T	R	+	+	A +ve	2	N	N	Secretory	Inflammatory	N	N
45	Ponnu	79518	38	4	V	72	NT	R	-	+	B +ve	2	N	EH	CGH	Inflammatory	N	EH
46	Nageswari	79509	27	0	IV	46	NT	R	+	+	B +ve	3	N	N	Secretory	Inflammatory	N	N
47	Jeya	79799	40	2	V	88	NT	IR	+	+	AB +ve	3	N	EH	Proliferative	Inflammatory	N	EH
48	Panchavarnam	85130	35	3	V	42	NT	R	+	+	B +ve	3	EP	EP	Proliferative	Inflammatory	EP	EP
49	Eswari	85136	37	5	V	58	T	R	+	+	B +ve	2	N	N	Secretory	Inflammatory	N	N
50	Rathi	43133	43	6	V	63	NT	IR	+	-	B +ve	2	N	N	Secretory	Inflammatory	N	N


BLOOD GROUPING
35
30
25
20
15
10
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0
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4
27
7
5
2
1
2
33
14
2
1
A
B
O
AB
Rh +ve
Rh -ve
Reproductive age group
Perimenopausal age group